DOCUMENT RESUME

ED 459 764 IR 058 258

AUTHOR	Naito, Eisuke
TITLE	Japan InK: Distributing the Information Networked Knowledge (InK) Base to the Japanese Research Community.
PUB DATE	2001-08-00
NOTE	7p.; In: Libraries and Librarians: Making a Difference in the Knowledge Age. Council and General Conference: Conference Programme and Proceedings (67th, Boston, MA, August 16-25, 2001); see IR 058 199.
AVAILABLE FROM	For full text: http://www.ifla.org.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Libraries; *Cataloging; Foreign Countries; Futures (of Society); Higher Education; *Information Management; *Library Networks; Library Services; *Shared Resources and Services; Training; Work Environment
IDENTIFIERS	Japan; *Knowledge Management

ABSTRACT

This paper discusses knowledge management (KM) in relation to a shared cataloging system in Japanese university libraries. The first section describes the Japanese scene related to knowledge management and the working environment, including the SECI (Socialization, Externalization, Combination, Internalization) model, the context of knowledge, and potential changes in the management of universities and university libraries. The second section addresses KM in a shared cataloging system, including services of NII/NACSIS (National Institute of Informatics/National Center for Science Information Systems), the NACSIS-CAT shared cataloging service, and training and user support. The third section considers the future of university libraries in regard to information/knowledge. (MES)

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ED 459 764

67th IFLA Council and General Conference August 16-25, 2001

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Code Number: 087-99-E
Division Number: II
Professional Group: Social Science Libraries
Joint Meeting with: Government Libraries and Management and Marketing
Meeting Number: 99
Simultaneous Interpretation: Yes

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Japan InK - Distributing the Information Networked Knowledge (InK) Base to the Japanese Research Community

Eisuke NAITO
Human and Social Information Research, National Institute of Informatics
NII, 2-1-2, Hitotsubashi, Chiyoda-ku, Tokyo 101-8430, Japan
Fax: +81-3-3556-1916;
E-mail: naito@nii.ac.jp.

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Abstract:

Knowledge Management (KM) in relation to a shared cataloging system in Japanese university libraries (NACSIS-CAT) is introduced. Social background of one example of KM in Japan, as the context of KM, is discussed such as permanent employment, age seniority, government reformation are introduced. Figures and shape of NACSIS-CAT is provided for highlighting the need of knowledge management and KM techniques applied are introduced. Immediate demands for KM application and enhancement for university libraries in Japan is discussed in terms of the economic pressure; end-user orientation and internationalization

Introduction
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Introduction

Knowledge Management, promoted in Western industrialized countries during 1990s, is very new to Japanese organizations in general. Leading companies are being aware of the concepts and methods. However, for the majority of working places, of small and medium size organizations, knowledge sharing and its management have been carried out without awareness of the new Western concept. It is presumed that unconscious knowledge management is based on the employment structure. Majority of university libraries in Japan are of small and medium size organizations. KM in university library services is demanded to increase competences and productivity of, and acceptance by users (teachers and students). An example is introduced to show somewhat traditional means of knowledge sharing in the case of shared cataloging work. The Internet Web page is intensively applied for the purpose.

1 Japanese Scene

1.1 Knowledge Management

It was only early 1990s when Professor NONAKA Ikujiro presented SECI model.

Socialization: tacit knowledge: Parent to children; senior colleague to junior; learning by doing...
Externalization: explicit knowledge: description of the tacit knowledge
Combination: combining the explicit knowledge
Internalization: individualization of the explicit knowledge and experience leading to new tacit knowledge

The model suggests the evolving process of personal knowledge to group knowledge and the next step (field) of new personal knowledge. Evolution of concepts and application of Knowledge Management is still in progress (in knowledge creating spiral).

Context of knowledge (5W1H) depends on situation, person, time and relationship.[1] These factors shall be recognized for evaluating the knowledge.

- Situation: in what situation the knowledge is created or used.
- Person: by what position or by what role the person is playing
- Time: when the knowledge became useful
- Relationship: from who to whom

Concept and application of Knowledge Management has been "imported" to Japan in mid 90s. For example, the Knowledge Management Society of Japan (http://home.att.ne.jp/green/kmsj/index.html) was established in 1998. One special issue of Japanese professional journal in information services was published in 2000 devoted to knowledge management.

1.2 Working Environment

SECI model is of universal application. However, there are factors affecting the concept and application of knowledge management in Japan. The societal background should be taken into account when applying the KM concept to management and administration.

Permanent employment and salary scale according to age seniority is still the basic framework of employment. Permanent employment, generally speaking, is to get new job applicants fresh from schools, from junior high (15 years old), high school (18), undergraduate (22). They are supposed to stay a company until retirement (60). Some work for 38 years in a company, even the company faces merger with other company, still most of them remain in the new company.

Salary scale according to age seniority, generally speaking, offers equal wage to employees who are of same age and employed in the same year. Promotion in terms of ranks takes place with subtle consensus among the equal rank. Promotion exists in terms of bonus, but still it tries to be equal in a long run.

By these two basic frameworks of employment, workers get used to the working environment and work procedures. Employment is taken as a way to belong to a family. Training of new comers is carried out formally by the company and informally by the working team (family). Quality management is mutual education among the working team. Manual of work was introduced by IBM, MacDonald and Disney Land to Japan during 1970s, and coincided to the period of introduction of computers in business and commercial use. In other words, working method based on manual is still new, and limited to large organizations.

Top most companies are moving toward new employment systems based on head hunting and job hunting. There is a strong tendency among younger generation to get job temporally. Carrier development is revolutionary changing in Japan.

Regarding to university community, recent two developments will produce a cultural revolution: Government Reformation and reformation of national university into Independent Administrative Agency (IAA).[2] The national government has maintained national universities. When the national university will become IAA, then management of university will be changed, and management of university libraries will be changed. The libraries have suffered from the price rise of publication, IT investment, license fees of online journals, etc. This is the situation of Japanese university libraries facing to the knowledge intensive future.

2 Knowledge Management in a Shared Cataloging System

2.1 NII/NACSIS Services

The National Institute of Informatics (NII) was founded on April 1, 2000, as an Inter-university Research Institute, under the jurisdiction of the Ministry of Education, Science, Sports and Culture (MonbuKagakusho) in order to implement comprehensive research on informatics and to develop advanced infrastructure for science information.

Prior to the establishment of NII, the preceding organization was the National Center for Science Information Systems (NACSIS) established in 1986. The history goes back to 1973 to another ancestors. In 1984, a nation-wide shared cataloging system (NACSIS-CAT) was introduced. It was started by three national university libraries.

As of March 2001 NII offers the following services

- National backbone network for research (higher education) institutions (SINET)
- Online Shared Cataloguing / ILL transaction service (NACSIS-CAT)
- WebCat
- Database construction and access (NACSIS-IR)
- Electronic Library (scanned journal articles) (NACSIS-ELS)
- Online Journal Compilation Systems (NACSIS-OLJ)
- Web Site for Scholarly Community (Academic Society Home Village)
- Directory of Research Activities and Resources (NACSIS-DiRR)
- Recruit Web page for research positions (NACSIS-CIS)

2.2 NACSIS-CAT

NACSIS-CAT is a shared cataloging service participated by 1,700 libraries among 855 institutions, mostly university libraries. 24 libraries participate to NACSIS-CAT from overseas. Record registration is made about 30,000 records per day. WebCat, the national union catalog on the Web, is available to the public and there are 37,000 accesses per day.

Volume of NACSIS-CAT database

Monographs	bibliography	5.7 Million
	holdings	52.4 Million
Serials	bibliography	236,000
	holdings	3.5 million
Author authority		1.1 million
Uniform title		18,000
Serial Title Change		28,000

NACSIS-CAT offers ILL request function and processes 4,300 requests per day, which shares about 70 % of the total requests in university libraries. Average delivery is 4.5 days. The ratio of derived (copy) cataloging is about 95 % so that the original cataloging is done for 1,500 titles per day. 8,500 online terminals are registered, of which the number of active terminals are 3,000 at the peak.

The number of cataloger registered, as the NACSIS-CAT user is 4,600, and 95 % of whose work is derived cataloging. However, there is a tendency that the unique titles come together to small libraries in special subject field, or to large university libraries suddenly with short working time period. Here is the necessity of knowledge sharing for special cataloging.

Staff re-allocation happens in April every year. Some catalogers remain longer period, but there is always a possibility to accept new comers or complete layman as replacement. Literacy exists in every aspect and here also is the KM needs.

2.3 Training and User Support

NII/NACSIS offers a variety of training courses and user (cataloger) support. Training for online cataloging is three-days course. The cumulated total number of trainee is about 6,800 since 1986. Trainer (instructor) course is also run and 500 people graduated, then who became instructor in the regional training courses.

Instructors with experience are appointed from those who attended the trainer course. Training manuals are prepared based on the Nihon Cataloging Rules (NCR) for Japanese publication, AACR for English and other western language materials. Different versions of manual are allocated to courses in a rota to avoid clashing the target records in the training database.

In the end of the course, the trainees are asked to submit a questionnaire evaluating instruction, instructor, examples, explanations, etc. These comments are the source of review for the training method. Feedback is carried out through the questionnaire as well as questions raised during the course, by observing unexpected behavior of trainees, etc.

Online help is not provided, because NACSIS-CAT is a specialist application used by trained staff. However about 50 telephone enquires are made per year by complete beginner, re-assigned person in One-Person situation, and other reasons. Telephone enquires are handled by NACSIS-CAT office of three staff who administer the shared cataloging system among other work. Web pages are offered to NACSIS-CAT catalogers.

- "Online System Newsletter" (quarterly paper newsletter) (latest issue)
- Manuals in HTML and/or PDF
- Publications (web version of paper prints)
- Q&A database (1996-)
- Enquiry Web page

Q&A database service was started in 1996. It is searchable by keywords, topics, data fields, and types of database files such as monographs, serials, author authority files, etc. About 4,000 articles (topics) are stored and 700 articles were added during FY 2000. Articles are linked by topics, so that the related Q&A articles are specified by the record number and its title. In some cases, graphic data is attached to show, for example, the title page in question.

Discussion for revision was started in 1996, after 10 years of systems operation and matching to the development of "Client/Server model." A strategy was formulated to convert the entire system into that model by the year 2004 or 2005. When a new NACSIS-CAT system (i.e. Client / Server NACSIS-CAT) was introduced in 1998, Mailing list for both vendor and systems librarians was initiated. It holds 693 specialists members and 1,500 articles. Wording of the mailing list seem to be frank and friendly, probably quite similar to many other mailing lists. The list is accessible through the NACSIS-CAT Web Page with indexes by topics and by dates. It is also searchable with other databases and publications including the Q&A database.

So far, these methods and means of knowledge sharing with about 4,000 catalogers is carried out by these traditional newsletter on paper as well as online, Q&A database through Web, and the Mailing List. All of these methods may be taken as "traditional" Internet technique.

3 Information/Knowledge Intensive Future of University Libraries

Knowledge management of the shared cataloging systems, up to 2001, is largely based on the Internet Web pages. It combines people of specialization, educates each other. Information needs of the cataloger and quality control of the supplier (NII/NACSIS) are both met by these Web techniques. Catalogers and operator of the NACSIS-CAT are facing to future, and there are pressing demands for the information/knowledge intensive future: they are, among others, Economic pressure, End-user orientation, and Internationalization.

Economic pressure comes from the income structure. National universities in Japan are facing to become the independent administrative agency, and private universities are facing to decreasing enrolment (smaller student population). Expenditure structure is also pressed by the decreased human power in library by long term restructuring of university; IT investment; price rise of publication.

End-user orientation shall be recognized for library users. End-user of university libraries, i.e. researchers, teachers and students, are in competition ever more. They become IT richer day by day. For meeting information/knowledge needs, library strategies and tactics shall be sought in terms of knowledge supply and knowledge management.

Internationalization of knowledge services, of Japanese university libraries in somewhat isolation with other part of the world, is being noticed, since the recorded knowledge, especially on the Internet, runs quickly and limitlessly. Advanced users always go ahead of library services. Skill-up or KM of the library services is also demanded in this respect.

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[1] YAMAMOTO Hitoshi and OTA Toshizumi. "Context of Knowledge in Knowledge Management." Paper presented

at the Autumn Conference of the Japan Association of Management Information (JASMIN). October 21, 2000 (in Japanese).

[2] http://www.twics.com/~nsftokyo/rm99-11.html